

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please ADD new claim 15 in accordance with the following:

1. (PREVIOUSLY AMENDED) A driver circuit for driving a semiconductor laser in accordance with a data signal including data generated in bursts, comprising:

first bias current supply means for generating, at least at a time of non-output of data, a first bias current for driving the semiconductor laser in a predetermined area within a spontaneous emission area, to supply the first bias current to the semiconductor laser;

signal processing means for generating a pulse current control signal in which the data signal is delayed, using only the data signal, and generating a second bias current control signal that rises more rapidly by a predetermined time than the rise of the burst data included in the pulse current control signal;

pulse current supply means for generating a pulse current in accordance with the pulse current control signal generated in said signal processing means, to supply the pulse current to the semiconductor laser; and

second bias current supply means for generating a second bias current for driving the semiconductor laser in a predetermined area within the spontaneous emission area in accordance with the second bias current control signal generated in said signal processing means, to supply the second bias current to the semiconductor laser.

2. (PREVIOUSLY AMENDED) A driver circuit according to claim 1, wherein said first bias current supply means includes a temperature compensation section for changing the first bias current corresponding to characteristic changes in the semiconductor laser due to temperature changes.

3. (PREVIOUSLY AMENDED) A driver circuit according to claim 2, wherein said temperature compensation section has a thermistor with a resistance value which is changed with temperature fluctuations.

4. (PREVIOUSLY AMENDED) A driver circuit according to claim 1, further comprising:
optical output detection means for detecting the power of light output from the
semiconductor laser; and

first bias current control means for feedback controlling an operation of said first bias
current supply means so that the optical output power from the semiconductor laser at the time
of non-output of data becomes a constant level, based on a detection result of said optical
output detection means.

5. (PREVIOUSLY AMENDED) A driver circuit according to claim 1, wherein
said second bias current supply means has a differential amplification type circuit
structure.

6. (PREVIOUSLY AMENDED) A driver circuit according to claim 1, wherein
said second bias current supply means includes a temperature compensation section for
changing the second bias current corresponding to characteristic changes in the semiconductor
laser due to temperature changes.

7. (PREVIOUSLY AMENDED) A driver circuit according to claim 6, wherein
said temperature compensation section has a thermistor with a resistance value which is
changed with temperature fluctuations.

8. (PREVIOUSLY AMENDED) A driver circuit according to claim 1, wherein
said signal processing means generates said second bias current control signal which
rises more rapidly, by a time corresponding to a predetermined bit number or a predetermined
byte number, than the rise of burst data included in said pulse current control signal.

9. (PREVIOUSLY AMENDED) A driver circuit according to claim 8, wherein
said signal processing means generates said second bias current control signal which is
maintained at a high level over at least a predetermined period of the beginning side of the burst
data generation period.

10. (PREVIOUSLY AMENDED) A driver circuit according to claim 1, wherein
said first bias current supply means has a circuit structure the same as for said second

bias current control means, and generates said first bias current in accordance with a signal obtained by inverting the second bias current control signal generated by said signal processing section.

11. (ONCE AMENDED) A driver circuit according to claim 1, wherein
when a rise time of the second bias current is shorter than a time corresponding to 1 bit length of burst data,

said signal processing means comprises a delay section for delaying the data signal by a predetermined time, and a logical sum operation section for obtaining a logical sum of an output signal from said delay section and the data signal, and outputs the output signal from said delay section as the pulse current control signal, and outputs an output signal from said logical sum operation section as the second bias current control signal.

12. (ORIGINAL) A driver circuit according to claim 1, wherein
when the rise time of the second bias current is shorter than a time corresponding to 1 bit length of burst data, and also the second bias current is sufficiently larger than the pulse current,

said signal processing section comprises a delay section for delaying the data signal by a predetermined time, and outputs an output signal from said delay section as the pulse current control signal, and outputs the data signal as the second bias current control signal.

13. (PREVIOUSLY AMENDED) A method for driving a semiconductor laser in accordance with data signals including data generated in bursts, comprising :

generating, at least at a time of non-output of data, a first bias current for driving the semiconductor laser in a predetermined area within a spontaneous emission area, to supply the first bias current to the semiconductor laser;

generating a pulse current control signal in which the data signal is delayed, using only the data signal, and generating a second bias current control signal that rises more rapidly by a predetermined time than the rise of burst data included in the pulse current control signal;

generating a pulse current in accordance with the pulse current control signal, to supply the pulse current to the semiconductor laser; and

generating a second bias current for driving the semiconductor laser in a predetermined area within the spontaneous emission area in accordance with the second bias current control signal, to supply the second bias current to the semiconductor laser.

14. (PREVIOUSLY PRESENTED) A method for driving a semiconductor laser in accordance with data signals, including data generated in bursts, comprising:

supplying a first bias current for driving the semiconductor laser at least at a time of non-output of data, to drive the semiconductor laser in a spontaneous emission area;

supplying a second bias current to the semiconductor laser prior to data transmission by delaying a data signal; and

supplying a pulse current to the semiconductor laser a predetermined time after commencement of supplying the second bias current.

15. (NEW) A method for driving a semiconductor laser in accordance with data signals, comprising:

generating data in bursts;

supplying a first bias current for driving the semiconductor laser at least at a time of non-output of data;

supplying a second bias current for driving the semiconductor laser in a predetermined area within a spontaneous emission area in accordance with a second bias current control signal to supply the second bias current to the semiconductor laser; and

supplying a pulse current to the semiconductor laser a predetermined time after commencement of supplying the second bias current.

AI
end